AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Previously Presented) A method of screening test compounds for probable biological activities comprising the steps of

identifying two or more membrane mimetic surfaces each having a unique composition;

providing a set of control compounds, each control compound having a known biological activity and defining for each control compound an ordered set of numerical values related to its interaction with each respective membrane mimetic surface, whereby said ordered set of numerical values can be represented by the expression $\{C_1, C_2...C_n\}$ wherein n is the number of membrane surfaces;

defining an ordered set of numerical values $\{T_1, T_2....T_n\}$ for each test compound related to its interaction with each respective membrane mimetic surface; and

comparing the set of numerical values for each test compound with the sets of respective values for said control compounds and identifying the biological activities of those control compounds having ordered sets of numerical values best matching the respective numerical values in the ordered set of values for each test compound, wherein the best matching control compounds are those for which the angle θ in the formula cosine $\theta = (T_1C_1 + T_2C_2 + .. .T_nC_n)/ (T_1^2 + T_2^2 + . . .T_n^2)½ (C_1^2 + C_2^2 . . .C_n^2)½$ is less than about 20°.

2. (Original) The method of claim 1 wherein at least a portion of the numerical values are calculated.

3. (Original) The method of claim 1 wherein numerical values relating to the interaction of the compounds with each membrane mimetic surface are determined in a

chromatographic system using a mobile phase and a stationary phase comprising said membrane mimetic surface.

4. (Original) The method of claim 1 wherein at least one of the membrane mimetic surfaces comprises a head group of a phospholipid compound that occurs naturally in biological membranes.

5. (Original) The method of claim 3 wherein each value in the ordered set of numerical values for each respective compound corresponds to the retention time of the compounds in the chromatographic system using a predetermined stationary phase.

6. (Original) The method of claim 3 wherein each value in the ordered set of numerical values for each respective compound corresponds to the peak width of the compounds in the chromatographic system using a predetermined stationary phase.

7. (Currently Amended) The method of claim 1 wherein the membrane mimetic surfaces are selected from liposomes, ~~Langmuir-Blodget~~ Langmuir-Blodgett films, and immobilized artificial membranes.

8. (Original) The method of claim 1 wherein the numerical values for T and C for each membrane surface are each normalized against a common reference standard for said membrane surface.

9. (Cancelled)

10. (Previously Presented) The method of claim 1 wherein the angle θ is less than about 15°.

11. (Previously Amended) The method of claim 1 wherein the angle θ is less than about 10°.

12. (Original) The method of claim 3 wherein each membrane mimetic surface is an immobilized artificial membrane.

13. (Previously Presented) The method of claim 1 wherein at least one of the membrane mimetic surfaces comprises a mixture of lipid compounds.

14. (Cancelled)

15. (Currently Amended) A system for screening test compounds for probable biological activities in accordance with the method of claim 1, said apparatus comprising

two or more membrane mimetic surfaces, each having a unique composition,

means for quantifying the interaction of the test compounds and control compounds with each of the membrane mimetic surfaces and means for assigning a numerical value characteristic of said quantified interaction of the compounds for each respective membrane mimetic surface; and

a programmable computer for comparing the numerical values for the test compounds for each of the membrane mimetic surfaces with the numerical values for the control compounds for each of the membrane mimetic surfaces.

16. (Original) The test system of claim 15 further including a printer, a display or other means for reporting the control compounds having numerical values best matching those of the test compounds.

17. (Previously Presented) The test system of claim 15 further comprising a database containing numerical values characteristic of the interaction of selected control compounds for each membrane mimetic surface, at least a portion of said selected control compounds having a predefined biological activity.

18. (Original) The test system of claim 15 wherein the quantifying means is a chromatographic system and the membrane mimetic surfaces are stationary phases for said system.

19. (Previously Presented) A method of screening test compounds for biological activities comprising

selecting two or more membrane mimetic surfaces each having a unique composition,

selecting at least one training set composition comprising one or more control compounds having a common biological activity,

combining the test compounds with the training set composition to provide a test mixture;

contacting at least a portion of said test mixture with each of the membrane mimetic surfaces to define an ordered set of numerical values $\{T_1, T_2 \ldots T_n\}$ characteristic of the interaction of each test compound with the respective membrane mimetic surfaces and an ordered set of mean numerical values $\{Cm_1, Cm_2 \ldots Cm_n\}$ characteristic of the interaction of the training set compounds; and

comparing the numerical values to identify test compounds having numerical values that best match the mean numerical values for the training set compounds, wherein the best matching test compounds are those for which the angle θ in the formula cosine $\theta = (T_1Cm_1 + T_2Cm_2 + \ldots T_nCm_n)/ (T_1^2 + T_2^2 + \ldots T_n^2)^{1/2} (Cm_1^2 + Cm_2^2 \ldots Cm_n^2)^{1/2}$ is less than about 20°.

20. (Original) The method of claim 19 wherein the step of contacting the text mixture with the membrane mimetic surfaces is carried out in a chromatographic system wherein each membrane mimetic surface is a stationary phase in said system.

21. (Original) The method of claim 20 wherein the chromatographic system is a liquid chromatographic system utilizing a mass spectrometric detector.

22. (Original) The method of claim 20 wherein the step of comparing the numerical values includes the step of calculating a mean vector for the control compounds in each training set.

23-35. (Cancelled)

36. (Previously Presented) A method of screening test compounds for probable biological activities comprising the steps of

identifying two or more membrane mimetic surfaces each having a unique composition;

providing a set of control compounds, each control compound having a common biological activity and defining for each control compound an ordered set of numerical values related to its interaction with each respective membrane mimetic surface, whereby said ordered set of numerical values can be represented by the expression $\{C_1, C_2...C_n\}$ wherein n is the number of membrane surfaces;

calculating an ordered set of mean values for said control compounds represented by the set $\{Cm_1, Cm_2...Cm_n\}$;

defining an ordered set of numerical values $\{T_1, T_2....T_n\}$ for each test compound related to its interaction with each respective membrane mimetic surface; and

identifying those test compounds having ordered sets of numerical values best matching the ordered set of mean values for the control compounds wherein the best matching test compounds are those for which the angle θ in the formula cosine $\theta = (T_1C_1 + T_2C_2 + .. .T_nC_n)/ (T_1^2 + T_2^2 + . . .T_n^2)^{1/2} (C_1^2 + C_2^2 . . .C_n^2)^{1/2}$ is less than about 20°.

37. (Previously Presented) The method of claim 36 wherein at least a portion of the numerical values are calculated.

38. (Previously Presented) The method of claim 36 wherein numerical values relating to the interaction of the compounds with each membrane mimetic surface are

determined in a chromatographic system using a mobile phase and a stationary phase comprising said membrane mimetic surface.

39. (Previously Presented) The method of claim 36 wherein at least one of the membrane mimetic surfaces comprises a head group of a phospholipid compound that occurs naturally in biological membranes.

40. (Previously Presented) The method of claim 39 wherein each value in the ordered set of numerical values for each respective compound corresponds to the retention time of the compounds in the chromatographic system using a predetermined stationary phase.

41. (Previously Presented) The method of claim 39 wherein each value in the ordered set of numerical values for each respective compound corresponds to the peak width of the compounds in the chromatographic system using a predetermined stationary phase.

42. (Currently Amended) The method of claim 36 wherein the membrane mimetic surfaces are selected from liposomes, ~~Langmuir Blodget~~ Langmuir-Blodgett films, and immobilized artificial membranes.

43. (Previously Presented) The method of claim 36 wherein the numerical values for T and C for each membrane surface are each normalized against a common reference standard for said membrane surface.

44. (Previously Presented) The method of claim 39 wherein each membrane mimetic surface is an immobilized artificial membrane.

45. (Previously Presented) The method of claim 36 wherein at least one of the membrane mimetic surfaces comprises a mixture of lipid compounds.

46. (Cancelled)